

IN THE SPECIFICATION

Please amend paragraphs 0030, 0032, 0033, 0060, 0061, 0067, 0068, 0070, 0071, 0072, 0080, 0086, and 0093 as follows.

[0030] Fig. 7A is a view showing a distribution of an angle of light emitted from the ~~light guide plate~~ prism sheet.

[0032] Fig. 7C is a view showing a distribution of an angle of light transmitting the ~~prism sheet~~ light guide plate.

[0033] ~~Figs. 8A, 8B and 8C are views~~ Fig. 8 is a view for explaining a definition of each angle θ_a , θ_b and θ_c in Figs. 7A, 7B and 7C.

[0060] Fig. 12 is an explanatory view of a profile of one unit of the diffusion patterns 28 formed on the bottom surface of the optical film 23. The diffusion patterns 28 are formed with a pitch of approximately 10 to 40 μm . This diffusion pattern 28 has a main inclined plane 29 inclined toward the upper-right direction and auxiliary inclined plane 30 inclined toward the lower-right direction in Fig. 12. It is considered that light is emitted from the top surface of the light guide plate 22 toward the diagonally upward direction. The main inclined plane 29 has an inclination smoothly changed, so that it is a convex curved face viewed from below, while the auxiliary inclined plane 30 may be a gentle curved face or may be a flat face. When an angle made by a line segment connecting the lowermost point D to the uppermost point H of the main inclined plane 29 and a plane P (virtual) contacting to the bottom surface of the optical film 23 is defined as $[[a]] \alpha$, an inclination θ at each point of the main inclined plane 29 (an angle made by a tangent line contacting to the main inclined plane 29 and the plane P at each point) is changed between the minimum value and the maximum value with the angle $[[a]] \alpha$ sandwiched therebetween. Specifically, the inclination θ at each point of the main inclined plane satisfies the following equation:

$$\theta_{\min} = [[a]] \alpha - \beta \leq \theta \leq [[a]] \alpha + \gamma = \theta_{\max}$$

[0061] In Fig. 12, for example, the inclination at the lowermost point D of the main inclined plane 29 is $[\alpha] \alpha - \beta$, the inclination at the uppermost point H of the main inclined plane 29 is $[\alpha] \alpha + \gamma$, and the inclination at the central point between the lowermost point D and the uppermost point H is gradually changed from $[\alpha] \alpha - \beta$ to $[\alpha] \alpha + \gamma$ from the lowermost point D to the uppermost point H. Assuming that the emission angle of the light emitted from the light guide plate 22 is about $60^\circ \pm 15^\circ$, the inclination $[\alpha] \alpha$ of the line segment ~~liking~~ linking the lowermost point D to the uppermost point H may be set to from not less than 5° to not more than 30° , and more particularly, it is desirably set to about 20° . Further, the values of β and γ are desirably set to not more than 10° respectively. Accordingly, if $[\alpha] \alpha = 20^\circ$, the inclination of the main inclined plane 29 is changed from about 10° to about 30° . Moreover, the main inclined plane 29 is not changed with a uniform curvature from the lowermost point D toward the uppermost point H, but the curvature is gradually increased from the lowermost point D toward the uppermost point H.

[0067] Moreover, the back surface of this optical film 23 has the diffusion patterns 28 thereon, that means it is not a smooth surface, whereby an interference pattern such as Newton rings does not occur between the light guide plate 22 and the optical film 23. Further, the inclination of the main inclined plane 29 is limited within a range of the angle of inclination ($[\alpha] \alpha - \beta \leq \theta \leq [\alpha] \alpha + \gamma$), so that the spread of the light passing through the main inclined plane 29 and then scattered is also restricted, whereby the directivity due to the prism 27 is difficult to be deteriorated and a problem can be eliminated wherein light is emitted in the direction far away from the vertical direction to thereby cause a loss of light.

[0068] Fig. 15 is a view for showing a directional characteristic of the light emitted from the surface light source device 21 having the above-mentioned configuration. In the surface light source device 21 used for obtaining this data, the emission angle of the light emitted from the light-emitting surface of the light guide plate 22 is $60^\circ \pm 15^\circ$ and the used optical film 23 was formed by a resin having a refractive index of 1.6. The optical film 23 had the main inclined plane 29 with the angle of inclination of $[\alpha] \alpha = 19^\circ$ and $\beta = \gamma = 10^\circ$ and the auxiliary inclined plane 30 with the angle of inclination of 70° . The directional characteristic obtained as the result

represented a satisfactory characteristic having approximately bilateral symmetry shape as shown in Fig. 15.

[0070] Firstly, the diffusion pattern 28 composed of the flat main inclined plane 29 and the flat auxiliary inclined plane 30 is designed on the bottom surface of the optical film 23. Then, the angle $[\alpha]$ α of the main inclined plane 29 is determined such that the light incident on the diffusion pattern 28 with the incident angle of 60° is refracted on the main inclined plane 29 and the prism 27 and then emitted toward vertical upward direction as shown in Fig. 16A. This design provided the angle of inclination of the flat main inclined plane 29 of $[\alpha]$ $\alpha = 19^\circ$.

[0071] A part of the light L incident on the bottom surface of the optical film 23 is emitted toward vertical upward direction as shown in Fig. 16A, but a part of the remaining light L enters into the optical film 23 from the auxiliary inclined plane 30, and then, reflected by the prism 27 to thereby be returned to the side of the light guide plate 22 as described above. Moreover, a part of the light L introduced into the optical film 23 from the main inclined plane 29 is also reflected by the prism 27, emitted from the prism 27, returned again into the optical film 23 from the adjacent prism 27, reflected by the prism 27, and then, returned to the side of the light guide plate 22 as shown in Fig. 16B. When the optical film 23 is designed so as to have the main inclined plane 29 with the angle of inclination of $[\alpha]$ $\alpha = 19^\circ$ as described above, 67 % of the light L incident on the back surface of the optical film 23 with an angle of 60° is emitted toward vertical upward direction, while 33 % thereof is returned to the side of the light guide plate 22.

[0072] When the main inclined plane 29 is flat as shown in Fig. 16A, the light L emitted from the top surface of the optical film 23 is aligned to be parallel, but when the main inclined plane 29 is curved, the light L emitted from the top surface of the optical film 23 spreads within a predetermined range. On the other hand, the spread of the light (within the range of the emission angle) emitted from the surface of the optical film 23 has desirably a value of $\pm 30^\circ$ in general with respect to the vertical axis. Therefore, the main inclined plane 29 was curved such that, when the light L incident on the bottom surface of the optical film 23 with an angle of $60^\circ \pm 15^\circ$ was incident from the main inclined plane 29 and then emitted from the top surface of the optical

film 23, the light spread within the range of the emission angle of $\pm 30^\circ$. Consequently, the angle of inclination of the main inclined plane 29 was changed from $[[a]] \alpha - \beta = 9^\circ$ to $[[a]] \alpha + \gamma = 29^\circ$. Accordingly, the design result of $\beta = \gamma = 10^\circ$ was obtained. Further, $\beta = \gamma = 3^\circ$ may be established in the case of narrowing the spread of the light emitted from the optical film 23.

[0080] Fig. 19A is a plan view partly showing an optical film 45 according to still another embodiment of the present invention, Fig. 19B is a sectional view taken along a ~~line~~ line X1 - X1 in Fig. 19A, Fig. 19C is a view showing the back surface thereof, and Fig. 19D is a sectional view taken along a line X2 - X2 in Fig. 19C. This optical film 45 can be used for the surface light source device shown in Fig. 18. In this optical film 45, the prism 27 on the top surface is also suitably arranged sectionally, and further, the size of the prism 27 is also not uniform but formed to be random. Moreover, each prism 27 is sectioned like a tortoise shell in this optical film 45, thereby enhancing the degree of the randomness.

[0086] Fig. 22 is a sectional view showing a part of an optical film 47 according to still another embodiment of the present invention. In the optical film 23 explained with reference to Figs. 10 to 13, each diffusion pattern 28 has a convex curved surface viewed from the bottom surface, but it may have a concave curved surface viewed from the bottom surface. In this case, the inclination θ at each point on the section of the diffusion pattern 28 is also set to satisfy the equation of $[[a]] \alpha - \beta \leq \theta \leq [[a]] \alpha + \gamma$ with respect to the inclination $[[a]] \alpha$ of the segment line 31 connecting the lowermost point D to the uppermost point H.

[0093] Moreover, Fig. 30 ~~27~~ shows a mobile computer 63. This mobile computer 63 has a touch panel/display section 65 provided in a case 64, the touch panel/display section 65 being protected by closing a cover 66. The use of the surface light source device or the liquid crystal display of the present invention for the touch panel/display section 65 of this mobile computer 63 can provide a bright image, thereby providing a satisfactory visibility, or can suppress the exhaustion of a battery by a reduced loss of light. Further, a thin-sized touch panel/display section ~~53~~ 65 can also attribute to obtain a thin-sized mobile computer 63.